

Engaging Virtual Characters in Learning Environment



About the Project

DynaLearn aims at the development of an interactive learning environment where students are able to model conceptional system knowledge individually or in collaboration with others. Well established but currently independent technologies and concepts developed by academic partners from the Netherlands, Spain, Germany, Brazilia, Israel, Great Britain, Bulgaria and Austria are integrated to a software package that brings added value to the learners.

Core components contain:

- **Diagrammatic representations** to construct and analyse knowledge
- **Ontology mapping** to find co-learners working on similar concepts
- **Virtual Characters** to increase motivation and learning engagement

Integration of Virtual Characters

The objective to provide learners with an individual learning environment with teachers and learners that adapt to their skills immediately leads to the metaphor of a virtual classroom.

In this classroom, learners may directly engage in a dialog with virtual teachers, mentors or learning companions. They may help other agents by teaching them and subsequently watch their performance in a test or quiz. This way the virtual world becomes a (virtual) class room inside a (real) class room. The agents may either inhabit their own environment or reside on the learner's desktop as part of the modelling system. In this case, the monitor will serve as the agents' living space. Interaction and system responses are realized through a set of fully animated virtual characters that appear borderless directly on the desktop with full text-to-speech support.

Introducing Hamster School

Cartoon-like pets are expressive, but do not raise too high expectations regarding their conversational skills. Furthermore, they may evoke strong emotions in learners and thus have the potential to build long-term relationships with them.

We decided to employ hamsters because of their familiarity as pets and their strong presence in digital media. Once discovered by an Israeli zoologist in the Syrian Desert, gold hamsters became more and more popular as pets – first in the United States and a little bit later also in Europe.

The fact that hamsters have been heavily exploited as laboratory animals and specific kinds of hamster are now protected species in several countries, such as the Grey Hamster in Bulgaria, raises the awareness of the environmental problems to be addressed in DynaLearn.



The Teacher

... introduces the software, gives help, grades learners' work and points out errors.

Boy Student

Human learners can adopt a personal pet which accompanies them in the virtual class room scenario. The boy character has a cheeky and extroverted personality.



Girl Student

Learners also have the choice to adopt the girl as their pet which can be trained and fed with knowledge. She appears polite and as a person of good nature.

Quiz Master

Finally, the quiz master adds a playful part to our software. He can challenge learners or their pet with questions generated from the modeled system knowledge.

